AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth below.

1. (Currently amended) A waveform generating apparatus adapted for generating a periodical waveform on the basis of an inputted feature quantity,

the waveform generating apparatus including:

detecting means for detecting the inputted feature quantity;

oscillating means for computing ~~a recurrence formula with~~ at least two values of the periodical waveform at sample points ~~being as initial values~~ on the basis of the feature quantity detected by the detecting means, and assigning the at least two values as initial values to terms of a trinomial recurrence formula to thereby generate the periodical waveform based on the trinomial recurrence formula; and

output means for outputting the periodical waveform generated from the oscillating means.

2. (Currently amended) The waveform generating apparatus as set forth in claim 1,

wherein the periodical waveform is a sine wave, whereby in the case where value of a sine wave signal at an arbitrary time point of n is $y_{[n]}$, when phase Φ and frequency Ω_2 of the sine wave to be outputted are given as the feature quantity,

$$y_{[0]} = A \sin (\Phi)$$

$$y_{[1]} = A \sin (\Omega_2 + \Phi)$$

are used as initial values $y_{[0]}$, $y_{[1]}$, and a formula expressed below in which value $y_{[n+2]}$ of a sine wave signal at a time point of n+2 is represented by value $y_{[n+1]}$ of a sine wave signal at a time point of n+1 and value $y_{[n]}$ of a sine wave signal at a time point of n,

$$y_{[n+2]} = 2 \times A \cos (\Omega_2) \times y_{[n+1]} - y_{[n]}$$

is used as the trinomial recurrence formula.

3. (Currently amended) The waveform generating apparatus used for sine wave synthesis of a decoder supplied with encoded data including feature quantity obtained by performing ~~sine wave~~ periodical waveform analysis of a time series signal every encoding frame, the waveform generating apparatus as set forth in claim 1, wherein the feature quantity is periodically given every the encoding frame, and ~~a sine wave signal~~ the periodical waveform from the oscillating means is stored into storage means by the one frame to output the stored ~~sine wave signal~~ periodical waveform through the output means.

4. (Original) The waveform generating apparatus as set forth in claim 1, wherein plural oscillating means are used as the oscillating means to sequentially generate respective sample points of time series order of the periodical waveform by the plural oscillating means.

5. (Original) The waveform generating apparatus as set forth in claim 1, wherein plural feature quantities corresponding to plural waveforms are given as the feature quantity to generate signals of periodical waveforms every respective feature quantities to output a signal obtained by adding those signals.

6. (Original) The waveform generating apparatus as set forth in claim 1, wherein generation and/or addition of a wave or waves in which it is judged that contribution to final output waveform is small of the plural feature quantities is or are not performed.

7. (Currently amended) A waveform generation method of generating a periodical waveform on the basis of an inputted feature quantity, the waveform generation method including: a detection step of detecting the inputted feature quantity; a waveform generation step of computing ~~a recurrence formula with~~ at least two values of the periodical waveform at sample points ~~being as initial values~~ on the basis of the feature quantity detected by the detecting means, and assigning the at least two values as initial values to terms of a trinomial recurrence formula to thereby generate the periodical waveform based on the trinomial recurrence formula; and an output step of outputting

the periodical waveform generated by the waveform generation step.

8. (Original) The waveform generation method as set forth in claim 7, wherein the periodical waveform is a sine wave, whereby in the case where value of a sine wave signal at an arbitrary time point of n is $y_{[n]}$, when phase Φ and frequency Ω_2 of the sine wave to be outputted are given as the feature quantity,

$$y_{[0]} = A \sin (\Phi)$$

$$y_{[1]} = A \sin (\Omega_2 + \Phi)$$

are used as initial values $y_{[0]}$, $y_{[1]}$, and a formula expressed below in which value $y_{[n+2]}$ of a sine wave signal at a time point of n+2 is represented by value $y_{[n+1]}$ of a sine wave signal at a time point of n+1 and $y_{[n]}$ of a sine wave signal at a time point of n

$$y_{[n+2]} = 2 \times A \cos (\Omega_2) \times y_{[n+1]} - y_{[n]}$$

is used as the recurrence formula.

9. (Currently amended) The waveform generation method used for sine wave synthesis of a decoder supplied with encoded data including feature quantity obtained by performing ~~sine wave~~ periodical waveform analysis of a time series signal every encoding frame, the waveform generation method as set forth in claim 7, wherein the feature quantity is periodically given every the encoding frame to store a ~~sine wave signal~~ periodical waveform from a waveform generation step by the 1 (one) frame to output the stored ~~sine wave signal~~ periodical waveform.

10. (Currently amended) A decoder supplied with encoded data including feature quantity obtained by performing sine wave analysis of a time series signal every encoding frame, the decoder including a waveform synthesis unit comprising: separating means for separating feature quantity in the encoded data; detecting means for detecting the separated feature quantity; oscillating means for computing ~~a recurrence formula with~~ at least two values of periodical waveform at sample points ~~being as initial values~~ on the basis of the feature quantity detected by the detecting means, and assigning the at least two values as initial values to terms of a trinomial recurrence formula to

generate a periodical waveform based on the trinomial recurrence formula; and output means for outputting the periodical waveform generated from the oscillating means.

11. (Original) The decoder as set forth in claim 10, wherein the periodical waveform is a sine wave, whereby in the case where value of a sine wave signal at an arbitrary time point of n is $y_{[n]}$, when phase Φ and frequency Ω_2 of the sine wave to be outputted are given as the feature quantity,

$$y_{[0]} = A \sin (\Phi)$$

$$y_{[1]} = A \sin (\Omega_2 + \Phi)$$

are used as initial values $y_{[0]}$, $y_{[1]}$, and a formula in which value $y_{[n+2]}$ of a sine wave signal at a time point of n+2 is represented by value $y_{[n+1]}$ of a sine signal at a time point of n+1 and value $y_{[n]}$ of a sine wave signal at a time point of n

$$y_{[n+2]} = 2 \times A \cos (\Omega_2) \times y_{[n+1]} - y_{[n]}$$

is used as the recurrence formula.

12 (New) The waveform generating apparatus in claim 1, wherein the feature quantity is information of at least an amplitude and a phase of the sine wave.

13 (New) The waveform generating apparatus in claim 12, wherein the feature quantity further includes information of a frequency of the sine wave.

14. (New) The waveform generating apparatus in claim 7, wherein the feature quantity is information of an amplitude, a phase and a frequency of the sine wave.

15. (New) The waveform generation method in claim 14, wherein the feature quantity further includes information of a frequency of the sine wave.

16. (New) The waveform generating apparatus in claim 10, wherein the feature quantity is information of an amplitude, a phase and a frequency of the sine wave.

17. (New) The waveform generating apparatus in claim 16, wherein the feature quantity further includes information of a frequency of the sine wave.

AMENDMENTS TO THE DRAWINGS

Please replace Figures 1 and 2 with new Figures 1 and 2 attached hereto.